

CHAPTER III

RESEARCH METHOD

This chapter presents the description of the method employed in the study. The description covers study design, population and sample, study instrument, validity, and reliability testing, data collecting method, and data analysis.

A. Research Design

Study design is the way to collect data. This study uses quantitative study. According to Aliaga and Gunderson (2002:81), Quantitative study is ‘Explaining phenomena by collecting numerical data that are analyzed using mathematically based methods (in particular statistics).

In this study, the writer used the experimental study. According to Ary et al (2010:26) experimental study involves a study of the effect of the systematic manipulation of the variable on another variable. The manipulated variable is called the experimental treatment or the independent variable. The observed and measured variable is called the dependent variable. The writer chooses experimental study design because this study is the one intended to investigate the effectiveness of a certain treatment by using treatment and manipulation to know cause and effect relationship between one variable on another variable. In this study, the writer wants to know the effectiveness of the use e- module in students’ ability in writing of invitation card.

There are many kinds of the experimental. According to Sukmadinata (2013:203) there are many kinds of the experimental, such as true experimental, quasi experimental and pre experimental. Type of experimental study design that will be used is quasi-experimental study design named Nonrandomized Control Group.

The purpose of the teacher using quasi experimental study as a design because the writer to know different effect of the treatment between the experimental classes that was taught teaching by using e-module and control classes which was taught without using e-module. In quasi-experimental study design, there are two groups are involved in this study. The writer will give pre-test and post-test for both of groups. One group will get treatment (before post-test) and another group is a control group (will not get treatment before post-test).

Table 3.1 Nonrandomized Control Group Pretest Posttest

Group	Pre-test	Independent variable	Posttest
E	Y1	X	Y2
C	Y1	-	Y2

(Taken From Ary, 2010:316)

Where :

E : Experimental group

C : Control group

Y1 : Pre-test

Y2 : Post-test

X : Treatment on the experimental group

B. Population, Sampling, and Sample.

1. Population

Population is the region of generalization that consist of object or subject that that has certain quality and characteristic which is applied by the writer to be understood and concluded, (Sugiono 2014:115). In this context of study, the population is the students of MTs. Darul Hikamh especially on the eighth graders students in the first semester in academic year 2019/2020.

2. Sampling

Sampling is a process or a way the writer to taking sample. Ary (2002) states “the purpose of sampling is obtain information concerning the population”.). Sample in this study is taken by purposive sampling technic

3. Sample

Sample is the part of the quantity and the characteristic of population, (Sugiono,2014:116. After taking sample by purposive sampling technic, then the writer can gets the sample of the study. A sample is a portion of a population. It means that a good sample must represent the entire populations as good as possible, so that the generalization of the sample as true as population. In addition, Cohen, et. al (2005:92) stated that the quality of a piece of study not only stands or

falls by the appropriateness of methodology and instrumentation but also by the suitability of the sampling technique that has been adopted. The writer used the sample of two classes that were chosen as the sample by using the purposive sampling technique in choosing the class. According to Ary (2002:163) purposive technique sampling technique is a portion of population from whom or which data are collected.

In this study the writer selected classes 8F that consist of 30 students as the experimental group was taught by using e-module. Whereas, class 8D consisting of 30 students was selected as the control group of this study which was taught without using e-module.

C. Research Instrument

Instrument is tool of collecting data that should be valid and reliable. According Ary et.al (2010:2011) tests are valuable measuring instruments for educational study. A test is a set of stimuli presented to an individual in order to elicit responses on the basis of which a numerical score can be assigned. This score, based on the representative sample of the individual's behavior, is an indicator of the extent to which the subject has the characteristic being measured.

The instrument to collect the data in this study was test. The data were in the form of students' achievement on writing tests. The test was used to measured students' ability in writing invitation card. The test was done twice, before and after treatment (pretest-posttest). The pretest was used to see the students'

achievement in writing invitation card before treatment was given and the posttest was used to see students' achievement in writing invitation card after given treatment. To access students writing the writer set up analytic scoring rubric which included the criteria.

D. Variable of The Study

A variable is defined as anything that has quantity or quality that varies. Variable is the construct of the characteristic that will be studied, Sugiono (2014:38). This study consists of two variables:

1. Independent Variable

Independent variable is the variable that affect the dependent variable. In the context of this study the independent variable is a use e-module in teaching invitation card.

2. Dependent Variable

Dependent variable is the variable that is affected by independent variable. The dependent variable in this study is a student's achievement in writing invitation card.

E. Treatments

Treatments here mean that the researcher used e-module in teaching learning process. The writer give the treatments about e-module in teaching learning for the students three times on 17th February 2020, 24th February 2020, 2nd March 2020.

On 17th February 2020, the writer explains to the students about the definition, purpose, and generic structure of invitation card by using e-module. The students were also given the example of invitation card, so that they can analyze and understand the generic structure from it. In the end of teaching learning the writer displays the random question in e-module that can be answered directly by the students.

On 24th February 2020 the writer explains to the student about the language features of invitation card by using e-module. The first, the writer explain about simple future tense, persuasive word and specific participant. Then, the writer shows the video about how to make invitation card to the students. In order to make them easier in getting inspiration when they write invitation card.

On 2nd March 2020 the writer reviews all the materials that have been taught to the students. Here, the students have chance to ask the question about the material that did not understand yet to the writer. Then, the writer explain directly and give the task to write the creative invitation card.

F. Validity and Reliability of the Data

1. Validity

In the quantitative study the data must be valid. Valid means the data can be used to measure what be measured. The validity of questioner that was used in this study was concurrent validity.

Ary et al (2010: 225) said that validity is the most important consideration in developing and evaluating measuring instruments. Fraenkel and Wallen (2009:147) give addition that validity is the most important idea to consider when preparing or selecting an instrument for use. More than anything else, writers want the information they obtain through the use of an instrument to serve their purposes.

There are four types of validity; content validity, criterion-related validity, constructs validity, and face validity. In this study, the instrument tested by *using content validity, face validity, and construct validity* because those are relevant with this study. Validity become standard that shows whether the instrument is valid or not.

a. Content Validity

Lodico et al. (2006:93) state the content validity is composed of two items of validity, sampling validity and item validity. Both sampling validity and item validity involve having experts examine items that make up the instrument.

A test was said have content validity if its contents constitute a representative sample of language skills, structures, etc, being tested beside that the content of instrument has also to relevant with the purpose of the test. In this case, the content of the test should refer to

the “School Based Curriculum (SBC)”. Based on the standard competence in syllabus of SBC, it is mentioned that the eighth grade of Junior High School are expected able to comprehend the structure in the form invitation card to interact with the society around them. Based on the standard competence above, the students are expected to be able to read a simple text in the form of invitation card.

In this study, the content of items in testing used invitation card. It was suitable for the eighth grade students of MTS Darul Hikmah Tawangsari Tulungagung.

Table 3.2 Content Validity

Kompetensi Inti	Kompetensi Dasar
KI 4: Mengolah, menalar, dan menyaji, dalam ranah konkret dan ranah abstrak terkait dengan pengembangan yang dipelajarinya disekolah secara mandiri, bertindak secara efektif dan kreatif, serta mampu menggunakan metode sesuai kaidah keilmuan	4.5 menyusun teks khusus dalam bentuk greeting cards, sangat pendek dan sederhana, terkait hari hari spesial dengan memperhatikan fungsi sosial, struktur teks, dan unsur kebahasaan, secara benar dan sesuai konteks

Table 3.3 table of Content Validity of Test

Competence indicators	Test items	
	Pre-Test	Post - Test
Menyusun teks khusus dalam bentuk greeting cards, sangat pendek dan sederhana, terkait	Writing text invitation card	Writing text invitation card

hari hari spesial dengan memperhatikan fungsi sosial, struktur teks, dan unsur kebahasaan, secara benar dan sesuai konteks		
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From the table above, the test has a content validity because there is appropriateness between the test and the indicator. It is appropriate with the course objectives based on the syllabus of the second grade of junior high school.

b. Construct Validity

Brown (2003) stated that construct validity is any theory, hypothesis, or model that attempts to explain observed phenomena in our universe of perceptions. Construct may or may not be directly or empirically measured their verification often requires inferential data. Gay (2012:161) stated that construct validity is a mass convergent, divergent, and content-related evidence to determine that the presumed construct is what is being measured.

Construct validity is validity which shows how far the test is suitable with the theory that becomes a foundation on composing those tests. In construct validity, every item of questions should be measure the students' writing ability. In this instrument, the writer asked the students to make invitation card to measure the students'

comprehension in invitation text. Related to this study, the writer asked the students to write an invitation card. It showed that the test was valid based on face validity.

In this test, the writer asked students to write invitation card to measure students' ability in writing. The writer made this test based on the course objectives in the syllabus of eighth grade of MTs Darul Hikmah Tawangsari Tulungagung.

c. Face Validity

In this study, the writer used face validity by consulting with the expert as a validator. The first expert validator is English teacher in MTs. Darul Hikmah Tulungagung. After that the test has some viewpoint that makes it reliable in the face validity such as; the instructions in each section have to understandable for the students, the question must not be ambiguity to make students able to answer it and the time allocation.

2. Reliability

According Lodico et.al (2006:87), reliability refers to the consistency of score, that is, an instrument's ability to produce "approximately" the same score for individual over repeated testing or across different raters

Reliability is a measure that states the degree of consistency of test question, In order to ensure the reliability, the writer took the scores of the students' writing ability. She also analyzed the data that are in the form of interview transcripts and field notes to get the same results. Besides, she interviewed the collaborators and the students after the class to obtain the data about the teaching and learning process. The writer used content validity to get the validity of the quantitative data. Content validity can be fulfilled if the writer can clearly define the achievement that she are measuring (Brown, 2004:22). To gain the content validity, she conducted the writing performance test according to the standard competence and the basic competence.

Reliability is the consistency of the instrument in producing the same score on different testing occasions or with different raters. To get reliable the writer used inter-rater reliability. Inter- rater reliability is achieved when two scorers or two raters do the scoring (Isnawati: 23). Two rater in this study were the English teacher and the writer herself. This study, the writer also used SPSS 16.0 for window to know the reliability of test instruments. The criteria of reliability instrument can be divided into 5 classes as follows as follows (Ridwan : 2004), those are:

1. If the cronbach alpha score 0.00 – 0.20: less reliable
2. If the cronbach alpha score 0.21 – 0.40: rather reliable
3. If the cronbach alpha score 0.41 – 0.60: enough reliable

4. If the cronbach alpha score 0.61 - 0.80: reliable
5. If the cronbach alpha score 0.81 – 1.00: very reliable

In this study, the writer uses SPSS 16.0 for window to know the reliability of test as instruments intended to use.

Table 3.4 Result of Reliability

Reliability Statistics	
Cronbach's Alpha	N of Items
,944	2

Based table on above, that the test can said reliable or not can be seen through cronbach's alpha. The score of cronbach's alpha 0,944 it's means very reliable.

G. Normality and Homogeneity Testing

1. The Result Normality Testing

a. Normality Testing of Control Class

The normality testing used to check the data is normally distributed or not. The formula used to test the normality of the data was Kolmogorov - Smirnov test by the value of significant (α) = 0.050

Table 3.5 Result Normality Control Test

One-Sample Kolmogorov-Smirnov Test		pretest	posttest
N		30	30
Normal Parameters ^{a,b}	Mean	60,13	65,00
	Std. Deviation	11,079	10,527
Most Extreme Differences	Absolute	,169	,149
	Positive	,169	,149
	Negative	-,161	-,147
Test Statistic		,169	,149
Asymp. Sig. (2-tailed)		,029 ^c	,086 ^c

a. Test distribution is Normal.

b. Calculated from data.

c. Lilliefors Significance Correction.

Based on the table above is known that the significance value from pre-test is 0.169 and from the post test is 0.149. Both value from pre-test and post-test are bigger than 0.05. The sig/p value on pre-test is 0.169 and it is bigger 0.05 ($0.169 > 0.05$) means that the data is in normal distribution. Then, for post-test score the value of sig/p is 0.149 and that is bigger than 0.05 ($0.149 > 0.05$) means that the data is in normal distribution. It also means that H_0 is accepted and H_a is rejected. So, it can be interpreted that both of data (pre-test and post-test score) are in normal distribution.

b. Normality Testing of Experimental Class

The normality testing used to check the data is normally distributed or not. The formula used to test the normality of the data was Kolmogorov - Smirnov test by the value of significant (α) = 0.050.

Table 3.6 Result Normality Experimental Test

One-Sample Kolmogorov-Smirnov Test			
		pretest	posttest
N		30	30
Normal Parameters ^{a,b}	Mean	74,27	80,40
	Std. Deviation	9,537	9,761
Most Extreme Differences	Absolute	,156	,150
	Positive	,109	,096
	Negative	-,156	-,150
Test Statistic		,156	,150
Asymp. Sig. (2-tailed)		,062 ^c	,082 ^c

a. Test distribution is Normal.

b. Calculated from data.

c. Lilliefors Significance Correction.

Based on the table above is known that the significance value from pre-test is 0.156 and from the post test is 0.150. Both value from pre-test and post-test are bigger than 0.05. The sig/p value on pre-test is 0.156 and it is bigger 0.05 ($0.156 > 0.05$) means that the data is in normal distribution. Then, for post-test score the value of sig/p is

0.150 and that is bigger than 0.05 ($0.150 > 0.05$) means that the data is in normal distribution. So, it can be interpreted that both of data (pre-test and post-test score) are in normal distribution.

2. The Result Homogeneity Testing

a. Homogeneity Testing of Control Group

Homogeneity testing is conducted to know whether the collected data has a homogeneous variance or not. In this study, the Levene's test is used as a formula by the value of significance (α) = 0.050

3.7 Homogeneity Testing of Control Group

Test of Homogeneity of Variances			
pretest			
Levene Statistic	df1	df2	Sig.
.080	1	58	.779

Based on the table above it is known that the sig/p value is 0.779 higher than 0.05. So, it can be interpreted that the data is homogeneous

b. Homogeneity Testing of Experimental Class

Homogeneity testing is conducted to know whether the collected data has a homogeneous variance or not. In this study, the Levene's test is used as a formula by the value of significance (α) = 0.050.

3.8 Homogeneity Testing of Experimental Class

Test of Homogeneity of Variances			
pretest_posttest			
Levene Statistic	df1	df2	Sig.
,171	1	58	,681

Based on the table above is known that the sig/p value is 0.681 higher than 0.05. So, it can be interpreted that the data is homogeneous.

H. Data Collecting Method

According Arikunto (2010:127) test is a series of questions, or others which are used to measure the skill, knowledge, intelligent, ability or talent that have by individual or group. Thus, a test is a method to gain the data by giving some questions to the respondent.

1. Pre-Test

The pretest is aimed is to know the students' writing achievement before the treatments carried out. This test was administered before the treatment. The pretest is aimed is to know the students' writing ability before the treatments carried out. The writer came to the class, and explained the material also told to the students what they had to do. The writer asked the students to write invitation card by follows instructions. The writer gave time 60 minutes to finish working on it. It was done on 10th February 2020.

2. Post-Test

The post test was given to the experimental class and control class. It was given in order to know students' achievement after they were taught by using e-module (experimental class) and without e-module (control class). In this case, students were asked to make invitation card based on the correct order of generic structure, grammatical, language features. The posttest was given on March, 9th 2020.

I. Data Analysis

Analyzing data is a process of analyzing the acquired from the result of the study. After all the data needed in this study have been collected in writing invitation card. The writer analyzed whether there is a significant difference between the ability in writing achievement who are taught by using e-module and without using e-module. In conducting the test, the writer gave achievement the writing ability of the students. To describe the student's achievement in writing invitation card, the writer in this study using SPSS 16 for windows with the independent t-test. If the result of t- test was bigger than at the level of significance 0.05, the null hypothesis could not be rejected, indicated that e-module was not effective toward students' writing achievement in invitation card. By contrast, if significant level was bigger than t-test at the level of significance 0.05, the null hypothesis could be rejected indicating that e-module was effective toward students' writing achievement in invitation card. And if the significant value bigger than 0.05

means H_0 is accepted and H_a is rejected. On contrary, if the significance value smaller than 0.05 means that H_0 is rejected and H_a is accepted.